

WE CLAIM

1. A method of scheduling for servicing a plurality of output queues associated with a communications port, the method comprising cyclical steps of:
  - a. selecting for servicing an output queue holding at least one Payload Data Unit (PDU) from the plurality of output queues, the selected output queue having an associated credit counter holding a lowest credit value  $C(j)$ ;
  - b. selectively incrementing the credit value  $C(j)$  held in the credit counter to account for the transmission of the at least one PDU of a length  $L$  from the selected output queue; and
  - c. periodically decrementing the credit values  $C(j)$  of a subgroup of the corresponding plurality of credit counters associated with output queues holding at least one PDU pending transmission in accordance with transmission bandwidth apportionments  $A(j)$  assigned to each output queuewhereby selecting for servicing the output queue having the lowest credit value, emulated weighted fair queuing is achieved in the long run with minimal computation.

2. A method claimed in claim 1, wherein the plurality of output queues comprises at least two output queues.
3. A method as claimed in claim 1, wherein transmitting at least one PDU the method further comprises a step of transmitting only one PDU.
4. A method as claimed in claim 1, wherein selectively incrementing the credit value  $C(j)$  held in the credit counter associated with the selected output queue, the method further comprises a step of setting  $C(j)$  to  $L$  if  $C(j)$  has a positive value.
5. A method as claimed in claim 1, wherein selectively incrementing the credit value  $C(j)$  of the credit counter associated with the selected output queue, the method further comprises a step of setting  $C(j)$  to  $C(j)+L$  if  $C(j)$  has a negative value.
6. A method as claimed in claim 1, wherein the transmission of PDUs is divided into transmission periods and periodically decrementing the credit values  $C(j)$  of the subgroup of the plurality of credit counters is performed once during each transmission period.
7. A method as claimed in claim 6, wherein decrementing the credit values  $C(j)$  of the subgroup of the

plurality of credit counters is performed at the end of each transmission period.

8. A method claimed in claim 7, wherein decrementing the credit values  $C(j)$  of the subgroup of credit counters the method comprises a step of setting the value of each such credit counter to  $C(j)-A(j)$ .
9. A method as claimed in claim 1, wherein the method further comprises a step of sorting the output queues holding at least one PDU pending transmission according to the credit values  $C(j)$  held in the corresponding credit counters.
10. A method as claimed in claim 1, wherein the method further comprises a step of scanning through the credit counters of the plurality of output queues having at least one PDU pending transmission for the lowest credit value held in the corresponding credit counters.
11. A scheduler implementing the method of queue service scheduling claimed in claim 1.
12. A data switching node implementing the method of queue service scheduling as claimed in claim 1.